Calderbank 19-6-42

IN THE CLAIMS:

1 - 2. (Canceled)

3. (Previously Presented) A transmitter comprising:

a demultiplexer responsive to an applied input signal for developing L signal streams, and

L channel coding/space-time coding transmitters, each responsive to a different signal stream of said plurality of signal streams, and each carrying out channel coding followed by space-time coding, said channel coding/space-time coding transmitters developing rates R_i i=1,2,...,L, that are not identical to each other.

4. (Previously Presented) The transmitter of claim **3** where each of said channel coding/space-time coding transmitters comprises:

a channel coding encoder of rate R_i,

a space-time encoder responsive to output signal of said channel coding encoder,

a mapper and pulse shaping circuitry responsive to said space-time encoder, and

at least two antennas for transmitting a space-time coded signal created by said space-time encoder mapped by said mapper, and conditioned by said pulse shaping circuitry.

5. (Canceled).

6. (Previously Presented) The transmitter of claim **4** where said rates R_i i=1,2,...,L, are such that $R_1 > R_2 > \ldots > R_L$.

7. (Previously Presented) The transmitter of claim **4** where said channel coding encoder performs trellis encoding.

8. (Previously Presented) The transmitter of claim **4** where said channel coding encoder performs convolutional encoding.

Calderbank 19-6-42

15. (Previously Presented) A transmitter comprising:

a demultiplexer responsive to an applied input signal for developing an L signal streams where L is at least two,

L channel coding encoders i=1,2,...,L, each responsive to a different one of said plurality of signal streams and developing codes at R_i, where the rates for different values of index i are not identical to each other, and

L a space-time coding transmitters, each responsive to a different one of said channel coding encoders.

16. (Previously Presented) The transmitter of claim **15** where each of said space-time coding transmitters comprises:

a space-time encoder responsive to input signal of said space-time coding transmitter,

a mapper and pulse shaping circuitry responsive to said space time-encoder, and

at least two antennas for transmitting a space-time coded signal created by said space-time encoder, mapped by said mapper, and conditioned by said pulse shaping circuitry.

17. (Canceled)

18. (Previously Presented) The transmitter of claim **15** where said demultiplexer develops an L plurality of signal streams, where said channel coding encoders develop rates R_i i=1,2,...,L, that are such that $R_1 > R_2 > \cdots > R_L$.

19. (Previously Presented) The transmitter of claim **15** where said demultiplexer develops an L plurality of signal streams, where said channel coding encoders develop rates R_i i=1,2,...,L, that are such that $R_1 < R_2 < \cdots < R_L$.

20. (Previously Presented) The transmitter of claim **15** where said channel coding encoder performs trellis encoding or convolutional encoding.